

ZEHNER et al., Ser. No. 10/073,248

AMENDMENTS TO THE CLAIMS

1. (original) A continuous process for the hydroformylation of olefins having at least 6 carbon atoms in the presence of a homogeneous catalyst, wherein
 - a) a vertical tall cylindrical reactor (1) whose interior space is divided by means of internals (2) into at least two reaction chambers which extend essentially in the longitudinal direction of the reactor is used,
 - b) at least one olefin is introduced into the reactor together with synthesis gas at the lower end of the first reaction chamber,
 - c) a partially reacted reaction mixture is conveyed from the upper end of a reaction chamber to the lower end of a next reaction chamber; and
 - d) the hydroformylated olefin is taken off at the upper end of the last reaction chamber.
2. (original) A process as claimed in claim 1, wherein a reactor (1) whose interior space is divided by means of internals (2) so that the second and any further reaction chambers are arranged essentially concentrically to the outer wall of the reactor is used.
3. (previously presented) A process as claimed in claim 1, wherein unreacted synthesis gas is taken from the gas space at the upper end of one or more reaction chambers with the exception of the last reaction chamber and is fed back into the reactor.
4. (original) A process as claimed in claim 3, wherein the synthesis gas which has been taken off is fed back into the reactor by means of a jet pump (10) which is operated by means of the olefin and synthesis gas fed in.
5. (original) A process as claimed in claim 4, wherein the jet pump (10) is additionally operated by means of a partially reacted reaction mixture which is taken off at the lower

ZEHNER et al., Ser. No. 10/073,248

end of the first reaction chamber.

6-10. (canceled)